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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,728	02/12/2002	Patrick J. Toomey	9925-36938	2773

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GAGLIARDI, ALBERT J

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2878

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	licant(s) TOOMEY, PATRICK J.
	Examiner Albert J. Gagliardi	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 August 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 8,10-13,16-21,23-25,27-32,34-37 and 39-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 45-48 is/are allowed.
- 6) Claim(s) 8,10-13,16-21,23-25,27-32,34-37,39-44 and 49-53 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 February 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Comment on Submissions

1. The preliminary response filed 19 August 2002 has been entered.

Priority

2. The examiner has considered information considered by the Office in parent application 09/338,906 when examining this continuing application, and the application file reflects that fact. A list of the information need not be submitted in the continuing application unless the applicant desires the information to be printed on the patent. See MPEP § 609.

Information Disclosure Statement

3. The information disclosure statement filed 19 August 2002 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because:

References 1, 4, 6, 8, 9, 13, and 30 do not include at least a date of publication, a retrieval date prior to applicant's earliest priority date.

References 12, 15, 20, and 26 do not include a legible identification of the website from which the references were retrieved.

It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

5. Claims 24, 25, 27, 28, and 29 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The examiner notes that the cancellation of claims 22 and 24 has resulted in their being no antecedent basis for the identified claims.

Appropriate correction is required.

6. Claim 31 is objected to because of the following informalities:

Claim 31 recites wavelengths of 1.06 and 1.66 "nanometers" (x-ray wavelength). It is clear from the disclosure of the invention that the length should be in --micrometers--.

Appropriate correction is required.

7. The numbering of claims is not in accordance with 37 CFR 1.126. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). Since this is a new case, the claims should have been numbered consecutively beginning with 1. Though the numbering is incorrect, in order to avoid further confusion, the claims have not been renumbered. The examiner notes that no claims 1-8, 9, 14-15, 33, and 38 have been presented.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10-13, 16, 18-21, 23, 25, 27-28, 30-32, 34-37, 39-44, and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Dadachanji* (GB 2 303 444).

Regarding claim 10, *Dadachanji* suggest a method comprising the steps of: exposing with a generator a predetermined area of a structure with first electromagnetic radiation including at least one predetermined wavelength that is significantly absorbed by water (page 3, par. 2); sensing with a sensor unit second electromagnetic radiation from the structure, the second electromagnetic radiation based on the first electromagnetic radiation (page 3, par. 2); and determining whether a water suspect area exists in the structure based on the sensed second radiation (page 3, par. 2); and determining whether water exists in the structure based on the sensed radiation (page 3, par. 2).

Dadachanji does not specifically disclose the additional steps of performing further testing on the water suspect area and determining whether the water is present based on the further testing. Regarding the steps of performing further testing on the water suspect area and determining whether the water is present based on the further testing, it is well appreciated by those of ordinary skill in the art that all measuring and testing devices, including infrared measuring devices, are prone to some degree of error. Depending on the importance of the measurement, it is common in the art (and good engineering practice) to repeat and/or confirm the results of any measurement so as to increase the reliability of the test. Regarding the use of a

moisture detector such as a capacitance meter or resistivity meter, *Dadachanji* discloses that it is common in the art to use such instruments for determining the presence of moisture in buildings. As such, it would have been obvious to a person of ordinary skill in the art to utilize a moisture detector such as a capacitance meter or resistivity meter to confirm the presence of water in the structure in view of the well known use thereof for such purposes.

Regarding claim 11, although *Dadachanji* does not specifically disclose the additional step of determining the source of the water, those skilled in the art appreciate that the presence of moisture in a building is generally undesirable and therefore, once such moisture is discovered, it would be obvious to one skilled in the art to take remedial action including steps of determining the source of the water so that it can be eliminated.

Regarding claim 12, *Dadachanji* suggests (see explanation regarding claim 10 above) a method comprising the steps of: exposing with a generator a predetermined area of a structure with first electromagnetic radiation including at least one predetermined wavelength that is significantly absorbed by water and at least one predetermined reference wavelength that is not absorbed by water (page 3, par. 2); sensing with a sensor unit electromagnetic radiation at the detection wavelength and the reference wavelength (page 3, par. 2); determining whether a water suspect area exists based on the sensed detection and reference wavelengths (page 3, par. 2); testing the water suspect area with a moisture meter (see explanation regarding claim 10 above); and determining whether water is present based on the testing (see explanation regarding claim 10 above).

Regarding claim 13, *Dadachanji* discloses that the detection wavelength is the same as the exposure wavelength (page 3, par. 2).

Regarding claim 16, determining the source of the water would have been an obvious design choice within the skill of a person of ordinary skill in the art (see explanation regarding claim 11 above).

Regarding claim 18, *Dadachanji* suggests (see explanation regarding claim 10 above) a method comprising the steps of: generating and exposing with a generator a predetermined area of a structure with electromagnetic radiation including at least one predetermined wavelength that is significantly absorbed by water and at least one predetermined reference wavelength that is not significantly absorbed by the structure (inherent aspect of a “reference” wavelength) (page 3, par. 2); sensing with a sensor unit electromagnetic radiation from the exposed area of the structure to determine an intensity level of the exposure wavelength and the reference wavelength (page 3, par. 2); comparing the intensity levels (page 3, par. 2); determining whether a water suspect area includes water if the intensity levels differ by a predetermined amount (page 3, par. 2); and determining that the area includes no water if the intensity levels do not differ by a predetermined amount (inherent or obvious).

Regarding claim 19, *Dadachanji* suggests the use of an electromagnetic generator and a sensor unit (page 3, par. 2). The steps of positioning the generator and positioning the sensor are inherent or otherwise obvious aspects of suggested method that must necessarily be performed before the steps of generating and sensing.

Regarding claim 20, *Dadachanji* discloses that the generator and sensor are positioned such that the sensor receives generated light by reflection (page 3, par. 2).

Regarding claim 21, although *Dadachanji* discloses that the generator and sensor are positioned such that the sensor receives generated light by reflection, it is well known in the art

to perform infrared analysis by other functionally equivalent means including by transmission. Therefore, depending on the needs of the particular application, it would have been an obvious design choice within the skill of a person of ordinary skill in the art to modify the device disclosed by *Dadachanji* such the generator and the sensor unit are arranged such the sensor unit receives the generated radiation by transmission through the structure in view of the well known functionally equivalent means of infrared analysis.

Regarding claim 23, *Dadachanji* discloses that the generator is an infrared generator. Those skilled in the art appreciate that quartz halogen lamps are well known for use as infrared generators and, absent some degree of criticality, would have been an obvious design choice within the skill of a person of ordinary skill in the art depending on the needs of the particular application.

Regarding claim 25, although *Dadachanji* does not specifically identify the means for supporting the infrared source, it is well known to use support structures such as photographic stands for supporting electromagnetic radiation sources. Those skilled in the art appreciate that supports such as photographic stands are simple to operate, easily adjusted, and readily available. Therefore it would have been an obvious design choice within the skill of a person of ordinary skill in the art to use a photographic stand for supporting the source so as to allow for use of a support that is simple to operate, easily adjusted, and readily available.

Regarding claims 27 and 28, although *Dadachanji* does not specifically identify the type infrared sensing unit, spectrometers and spectroradiometers are well known for use as infrared sensing units and, absent some degree of criticality, would have been an obvious design choice within the skill of a person of ordinary skill in the art.

Regarding claims 30 and 31 *Dadachanji* discloses that the exposure and reference wavelengths are in the infrared range and that the exposure wavelength should be one that is significantly absorbed by water and the reference wavelength should include one that is not significantly absorbed by water (page 3, par. 2). The identification of particular wavelengths meeting the indicated criteria would have been an obvious design choice within the skill of a person of ordinary skill in the art.

Regarding claim 32, performing further testing to confirm the presence of water would have been an obvious design choice within the skill of a person of ordinary skill in the art (see explanation regarding claim 10 above).

Regarding claims 34-36 and *Dadachanji* suggest (see explanation regarding claim 10 above), that the testing be performed with a moisture meter such as a capacitance meter or a resistivity meter.

Regarding claim 37, although not specifically disclosed by *Dadachanji*, those skilled in the art appreciate that one of the more obvious means of confirming the presence of moisture is by use of visual inspection. The use of endoscopic probes is well known for use in visual inspection and, absent some degree of criticality, would have been an obvious design choice within the skill of a person of ordinary skill in the art depending on the needs of the particular application.

Regarding claims 39-41, the steps of using instruments such as capacitance meters, resistivity meters, and endoscopic probes are well known and would have been obvious design choices within the skill of a person of ordinary skill in the art.

Regarding claim 42, determining the source of the water would have been an obvious design choice within the skill of a person of ordinary skill in the art (see explanation regarding claim 11 above).

Regarding claims 43-44 and 49 those skilled in the art appreciate that many sources of water and/or moisture in buildings (i.e., ground water, rain water, leaks from plumbing and heating/cooling systems, condensation/steam from heating cooling systems, etc.) are generally determinable by analysis of a variety of well known physical and chemical properties of the water (i.e., salinity, pH, color, odor, the presence/non-presence of contaminants such as water soluble substances, the presence/non-presence of additives such as chlorine, chloramine, and antifreeze, etc.). Absent some degree of criticality, it would have been an obvious design choice within the skill of a person of ordinary skill in the art to modify the method as suggested by *Dadachanji* to perform further analysis on the water utilizing any of the variety of well known analytical techniques including testing the salinity, pH, and/or testing for the presence/non-presence (purity) of contaminants and/or additives so as to determine the source of water so that moisture can be eliminated.

Regarding claim 50, *Dadachanji* discloses that the exposure wavelength and the reference wavelength are in the range of 10^{-2} and 10^8 micrometers (i.e. a range including infrared).

10. Claims 8, 17, 24, 29, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Dadachanji* (GB 2 303 444) in view of Hellmuth *et al.* (DE 195 20 035).

Regarding claim 8, *Dadachanji* suggests a method comprising the steps of: exposing with a generator a predetermined area of a structure with first electromagnetic radiation including at

least one predetermined wavelength that is significantly absorbed by water (page 3, par. 2); sensing with a sensor unit second electromagnetic radiation from the structure, the second electromagnetic radiation based on the first electromagnetic radiation (page 3, par. 2); and determining whether water exists in the structure based on the sensed second radiation (page 3, par. 2); and determining whether water exists in the structure based on the sensed radiation (page 3, par. 2).

Although *Dadachanji* does not specifically identify the size of the area exposed to radiation as being at least one square meter, those skilled in the art appreciate that when examining large objects such as buildings, it is known in the art and considered an obvious design choice to expose large areas (i.e., areas of greater than one square meter) of the structure to radiation in order to allow for the structure to be scanned in a reasonable amount of time. *Hellmuth*, for example, discloses a system for measuring moisture in large objects comprising an infrared camera with an optical system that may be adapted for long-range and wide-angle observation and a source of radiation with a wattage of 250 W or 500 W (see English language abstract). Those skilled in the art would appreciate that such a system suggests exposing a predetermined area of an object that is at least one square meter. Therefore, if not an inherent aspect of the method suggested by *Dadachanji*, it would have been obvious to modify the method so as to expose an area of at least one square meter, as suggested by *Hellmuth*, so as to allow the method to be efficiently utilized on large objects such as structures.

Regarding claim 17, *Dadachanji* as modified in view of *Hellmuth* (see explanation regarding claim 8 above) suggest exposing an area of at least one square meter.

Regarding claim 24, *Dadachanji* as modified in view of *Hellmuth* (see explanation regarding claim 8 above) suggests the use of a radiation generator with a power between 10 and 1,000 watts.

Regarding claim 29, in the method suggested by *Dadachanji* as modified in view of *Hellmuth* (see explanation regarding claim 8 above), *Hellmuth* discloses that moisture detection of large objects can be performed with a sensing unit such as an infrared imaging camera (see English language abstract). Hyperspectral imaging systems are well known for use in infrared imaging. Those skilled in the art appreciate that imaging systems generally allow for larger areas to be analyzed in a shorter time. Therefore, absent some degree of criticality, it would have been an obvious design choice within the skill of a person of ordinary skill in the art to modify the method disclosed by *Dadachanji* to utilize a hyperspectral imaging system so as to allow for a larger area to be tested in a short period of time.

Regarding claim 51, *Dadachanji* as modified in view of *Hellmuth* (see explanation regarding claim 8 above) suggest exposing an area of at least one square meter.

Regarding claims 52-53, *Dadachanji* discloses that the structure is a building (page 1, par. 1). Identification of the building as a house is considered an obvious design choice.

Allowable Subject Matter

11. Claims 45-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 45, the prior art (*Dadachanji*, for example,) does not disclose or fairly suggest a method of determining the presence of moisture in structures utilizing electromagnetic radiation and further including steps of determining the source of the water to be ground water by using electromagnetic radiation including exposure and reference wavelengths relating to at least one water soluble substance.

Claims 46-48 are allowable on the basis of their dependency.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (703) 305-0417. The examiner can normally be reached on Monday thru Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Albert J. Gagliardi
Examiner
Art Unit 2878

AJG
November 16, 2002